

BUSHFIRE HAZARD ASSESSMENT & MANAGEMENT PLAN



FLINDERS LAKE CABINS

PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

Approval no: DEV2018/970

Date: 8/08/2023



**ROB FRIEND
& ASSOCIATES**

Document Control

RFA22-058

QUALITY ASSURANCE STATEMENT				
Revision No.	Author	Status	Approved for Issue	
			Name	Date
01	Lucy Ford	Draft	Rob Friend, Director, RF&A pl	22 November 2022
02	Lucy Ford	Final	Rob Friend, Director, RF&A pl	6 June 2023

This document has been prepared solely for the benefit of Pacific International Development Corp Pty Ltd and is issued in confidence for the purpose only for which it is supplied. Unauthorised use of this document in any form whatsoever is prohibited. No liability is accepted by Rob Friend & Associates Pty Ltd or any employee, contractor or sub-consultant of this company with respect to its use by any other person.

This disclaimer shall apply notwithstanding that, the document may be made available to other persons for an application for permission or approval or to fulfil a legal obligation.

Cover Photo: View of Cabin Cybele with hammock and campfire setting in a rural setting.



TABLE OF CONTENTS

1	Introduction	2
2	Proposal	2
3	Site Description	2
4	Bushfire Hazard Mapping	3
5	Findings	3
5.1	Vegetation	3
5.2	Bushfire Hazard Assessment	4
6	Conclusions	9
7	References	10
8	Bushfire management Plan	11
8.1	General.....	11
8.2	Roads	11
8.3	Vegetation	11
8.4	Water.....	12
8.5	Rural Fire Brigade.....	12
8.6	Emergency Response Procedures	12
9	Attachment 1 – Bushfire Hazard Mapping	13
10	Attachment 2 - Photographic Plates.....	14

1 INTRODUCTION

This Bushfire Hazard Assessment has been prepared for Pacific International Development Corp Pty Ltd to inform the development of Flinders Lake Cabins in relation to bushfire issues within and adjacent to the site.

Both the State Planning Policy and Local government Planning Scheme map this area as potential bushfire hazard with the potential impact buffer area extending over a large portion of the property.

A site inspection was undertaken on the 2 November 2022 and 6 June 2023 to inform this report.

2 PROPOSAL

The proposal is for the installation of five relocatable short stay cabins in a rural setting. Access will be via walking tracks from carparks located approximately 100-200m from the cabin locations. Access to car parking areas is via semi formed gravel tracks within a large grazing property.

3 SITE DESCRIPTION

The Flinders Lake properties within which the cabins are located are described as Lot 3 on S311896 (678.152 ha) and Lot 200 on SP133189 (322.6884 ha) and have the address of Lot 3 Mount Elliott Road and 1109 Undullah Rd, Flinders Lake.

Current access to the land is via gravel tracks within the property from Wyatt Road.

The two properties are within the Greater Flagstone Priority Development Area (PDA) and will be subjected to a development application to Economic Development Queensland (EDQ).

The land consists of low hills and flood plains associated with Woollaman Creek and its tributaries. As the land has been used as a pastoral property and still is, much of the low land and flood plains are clear of significant areas of bushland and while the area is treed these are restricted to riparian vegetation along the drainage lines or relatively small patches of regrowth vegetation.

The State's mapping within Queensland Globes Regulated Vegetation Overlay maps vegetation within and adjacent to the site as Category X vegetation with small pockets of Category B area that is least concern and contains the following Regional Ecosystems:

RE12.9-10.2 *Corymbia citriodora* subsp. *variegata* open forest or woodland usually with *Eucalyptus crebra*. Other species such as *Eucalyptus tereticornis*, *E. moluccana*, *E. acmenoides* and *E. siderophloia* may be present in scattered patches or in low densities. Understorey can be grassy or shrubby. Shrubby understorey of *Lophostemon confertus* (whipstick form) often present in northern parts of bioregion. Occurs on Cainozoic and Mesozoic sediments. (BVG1M: 10b)

The site also is also mapped as containing Core Koala Habitat area and these small patches coincide with RE mapping.

All cabins are located within the Category X vegetation areas and outside of Koala Habitat areas.



Figure 1 Location of five relocatable cabins within Lot 200SP133189 (Gili, Zerya, and Josef) and Lot 3S311896 (Remy and Cybele) with Nearmap aerial imagery dated 2022. Dark green polygons indicate Koala Habitat Areas.

4 BUSHFIRE HAZARD MAPPING

The State Planning Policy Natural Hazards Risk and Resilience Bushfire Hazard mapping (Attachment 1) maps polygons of High and Medium Potential Bushfire Hazard within the property. Two cabins are located in a mapped medium potential bushfire hazard area and the remaining three cabins are mapped within an associated 100m impact buffer area.

Logan City Council bushfire overlay mapping is the same as the SPP mapping.

5 FINDINGS

5.1 VEGETATION

The vegetation within the property is grasslands maintained as grazing land with some mature eucalypt stands associated with waterways and hillsides. The vegetation is consistent with an established rural property where vegetation is maintained on creek bed and banks or steep sloping land to prevent erosion. Pasture grasses are the dominant vegetation cover, with a very sparse shrub layer under and canopy vegetation.

There are weed species associated with treed areas, however ongoing weed management is part of the overall property management plan.

5.2 BUSHFIRE HAZARD ASSESSMENT

The large rural property was and still is used as cattle grazing on a short-term rotation program. This means that the cattle grazing pressure is based on the herd allowed to graze on an area for a short duration before being moved on to another grazing area.

This activity, in terms of fuel availability, is classed as VHC 40.4 Continuous low grass or tree cover. While not an area of high fuel load, there is potential for grass fires (QFES, Oct 2019).

Table 1: Fire line intensity calculation for vegetation to the south and west of the development site (Leonard, Newnham, Opie, & Blanche, 2014).

Vegetation Hazard Class (VHC)	Potential Fuel Load (t/ha)	Potential Fire Weather Severity (FFDI)	Slope under hazardous vegetation (deg)	Potential Fireline Intensity (kW/m)	Potential Bushfire Hazard Class No	Potential Bushfire Hazard Class
40.4 Continuous low grass or tree cover	5	57	20	3,512	2	Not BPA
Input fields	Calculated fields					

At a maximum slope of 20 degrees, the Potential Fireline Intensity is 3,512kW/m and can be considered not a bushfire prone area. To be classified a Medium Bushfire Hazard the minimum fireline intensity is 4000kW/m. There are some small, vegetated areas that have the capacity to be involved in the event of a grassland fire, which is a more likely occurrence given the vegetation cover over the property. Mitigation of bushfire hazards will be to protect assets by regular management of vegetation and reduce risk to life and property by managing guest bookings on days of increased fire danger weather.

The property itself has a small firefighting appliance with a 2000L capacity dedicated water supply and refillable tanks. A site manager is on site at all times and will be able to manage any bushfire response and/or emergency evacuation procedures.

Each cabin is located in an area with unique topography and vegetation; however the overall bushfire management plan outcomes will be similar.

An asset protection zone around each cabin should be maintained up to 20m from all assets and guest accommodation and amenities, with grass regularly mown to a height of no more than 100mm.

Due to the size and remote location of the property we recommend that any guests that are staying in a cabin or have an impending booking to use a cabin will vacate on 'extreme' or 'catastrophic' fire weather days. Under the new Australian Fire Danger Ratings (AFAC Sept, 2022) actions to be taken are linked to ratings.

EXTREME: Take action now to protect life and property

CATASTROPHIC: For your survival, leave bushfire risk areas

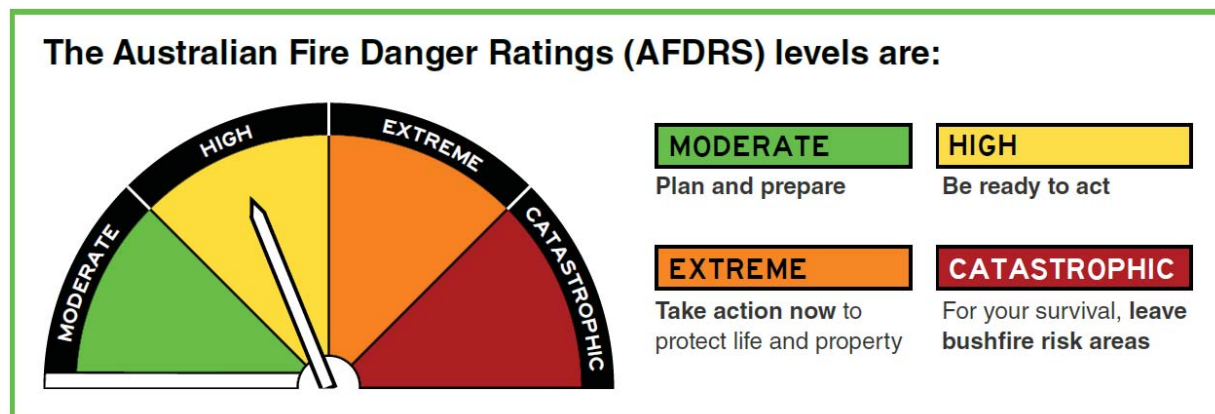
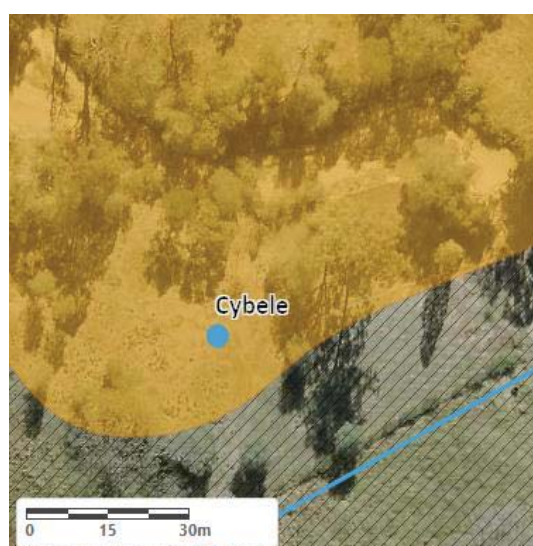


Figure 2 Australian Fire Danger Rating system and the actions associated with ratings.

Cabin Cybele

This cabin is located near the southeast corner of Lot 3 on S311896, with a creek wrapping the site to the east and north. The area is mapped as Medium potential bushfire hazard, and this is associated with vegetation within the narrow waterway corridor. The area immediately around the cabin is mature trees over a lawn or pasture grassland area.

Based on our site assessment the land around the cabin up to 100m can effectively be described as a low bushfire hazard based on the site characteristics of vegetation, fuel loads and slope.

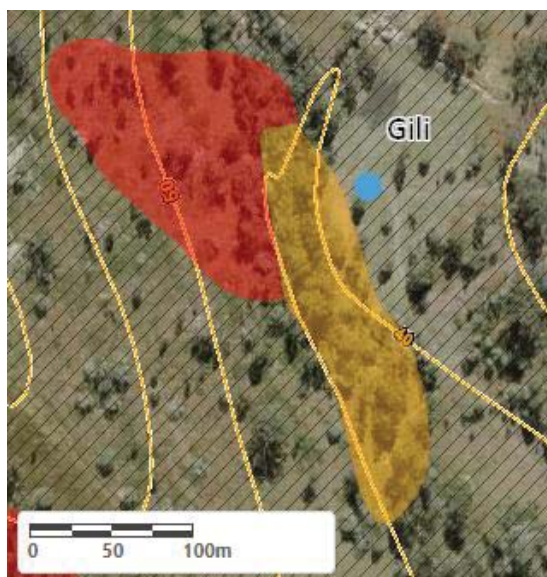


Cabin Gili

The cabin is located near the southern boundary of Lot 200, in a loop of a Woolloman Creek tributary.

The cabin is located on a higher flat area with the vegetation to the west mapped as Medium and High potential bushfire hazard. The vegetation is within a waterway corridor with steep banks in some areas. The vegetation is a narrow corridor with much of the hazard mapping occurring over land that is clear of woody vegetation.

Based on our site assessment the land around the cabin up to 100m can effectively be described as a low bushfire hazard based on the site characteristics of vegetation, fuel loads and slope.

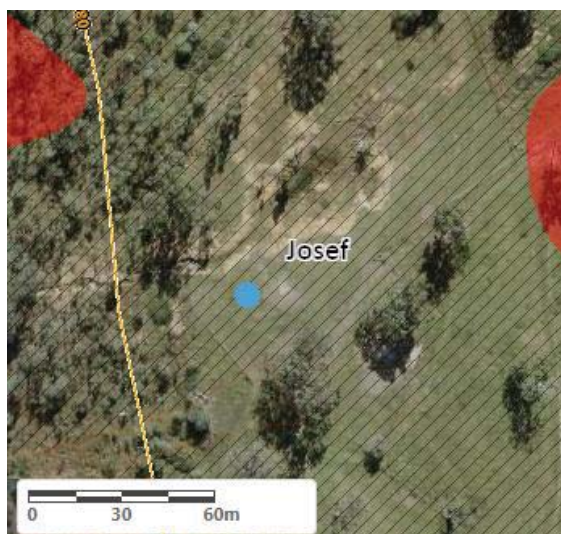


Cabin Josef (proposed)

This cabin is located on a hillside to the south of a disused quarry near the eastern boundary of Lot 200 SP133189.

This area is mapped as a 100m bushfire impact buffer area. There are some individual trees within 100m of the proposed location. A stand of trees is located to the east on neighbouring land and is mapped as hazardous. This is likely a result of the topography rather than canopy cover. Bushfire mitigation will be to maintain an area of low fuel around the cabin preventing any potential fire run from neighbouring vegetation.

Based on our site assessment the land around the cabin up to 100m can effectively be described as a low bushfire hazard based on the site characteristics of vegetation, fuel loads and slope.

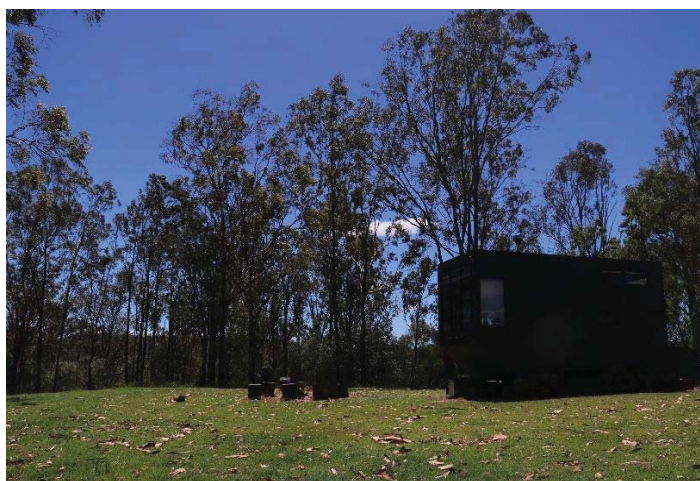


Cabin Remy

The cabin is located on a treed hilltop in the southwest corner of Lot 3 S311896.

The area immediately around the cabin site is mapped as Medium potential bushfire hazard with a connected polygon of High potential bushfire hazard to the north. The topography of the land would result in short fire runs burning upslope to the plateau where the cabin is located or lower intensity flanking fires burning across the slope. The area mapped as high potential hazard is largely clear of woody vegetation and trigger mapping is related to topography rather than canopy cover.

Based on our site assessment the land around the cabin up to 100m can effectively be described as a low bushfire hazard based on the site characteristics of vegetation, fuel loads and slope.

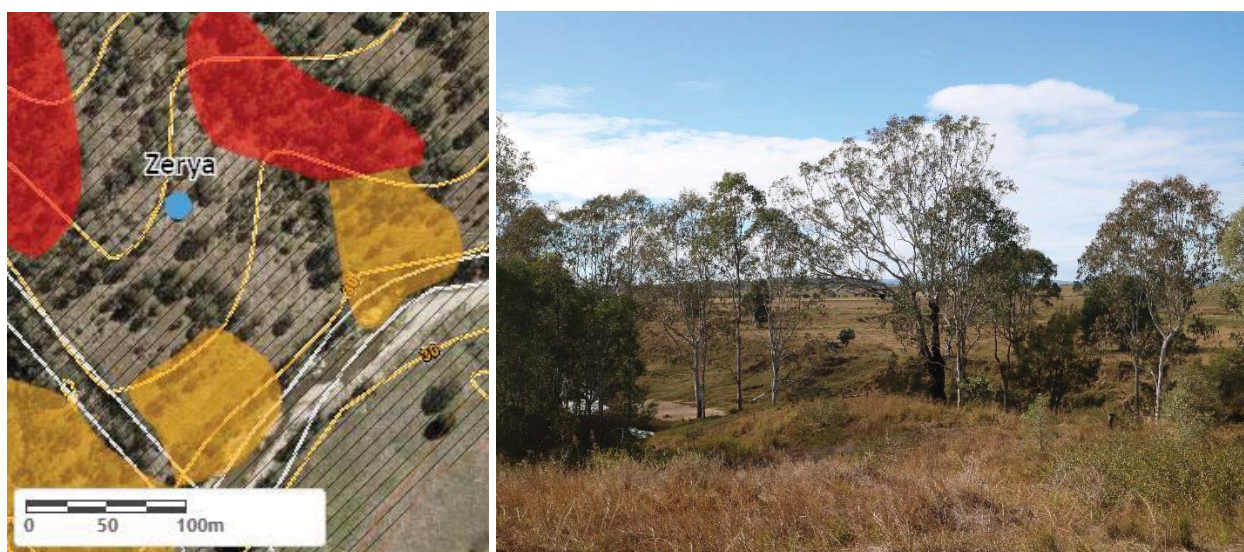


Cabin Zerya (proposed)

Located to the north of a creek in Lot 200 on SP133189, the cabin is located on a south face of a hillside to the south of Wyatts Road. The site looks towards neighbouring land and the creek.

This area is mapped as a 100m bushfire impact buffer area. There are some individual trees and stands of trees within 100m of the proposed location. To the west is a gully with steep banks and this vegetation is mapped as hazardous. Similarly, to the west an area of vegetation is mapped as high potential bushfire hazard. This is likely a result of the topography rather than canopy cover. Bushfire mitigation will be to maintain an area of low fuel around the cabin preventing any potential fire run from neighbouring vegetation.

Based on our site assessment the land around the cabin up to 100m can effectively be described as a low bushfire hazard based on the site characteristics of vegetation, fuel loads and slope.



6 CONCLUSIONS

The five cabins are not located in bushfire prone areas; however, a property wide bushfire management plan should be implemented in the event of a grass fire or low vegetation fire. The following conclusions are made for the mitigation and management of bushfire hazards that may impact the short stay cabins:

1. A Bushfire Management Plan is in place to mitigate hazards by:
 - o Managing vegetation in the larger pastoral property by rotation grazing and slashing
 - o Asset Protection Zones around each cabin and amenities are maintained as low fuel zones
 - o No guests are to be located in the cabins on extreme or catastrophic fire weather days
2. The property has available a dedicated firefighting appliance and mobile water supply
3. A site manager is always on site to manage any emergency or evacuation procedures.

7 REFERENCES

- Bureau of Meteorology. (2022). *Queensland Fire Danger Ratings*. Retrieved from BoM:
<http://www.bom.gov.au/qld/forecasts/fire-danger-ratings.shtml>
- Delaney, J., Boverman, D., & Matthews, S. (2017). Short Fire Runs: Assessing Bush Fire Risk From Small Areas of Vegetation. *NSW Rural Fire Service*, (p. 6).
- Leonard, J., Newnham, G., Opie, K., & Blanche, R. (2014). *A new methodology for state-wide mapping of bushfire prone areas in Queensland*. Australia: CSIRO.
- QFES. (Oct 2019). *Bushfire Resilient Communities Technical Reference Guide for the State Planning Policy State Interest 'Natural Hazards, Risk and Resilience - Bushfire'*. State of Queensland.

8 BUSHFIRE MANAGEMENT PLAN

8.1 GENERAL

1. A site manager on site at all times and will be able to manage any bushfire response and/or emergency evacuation procedures.
2. During days of Extreme or Catastrophic fire danger all guests are to vacate the premises, and any pending bookings are to be postponed until the fire danger rating is lowered.

Fire danger ratings under the Fire Behaviour Index can be viewed on the Bureau of Meteorology website (BoM, 2022) under the “South East Coast” district:

<http://www.bom.gov.au/qld/forecasts/fire-danger-ratings.shtml>



3. Gas bottle storage is on a concrete pavers with no vegetation growing around the storage area.
4. Potable water storage is to be located within 100m of each cabin on a non-flammable bases.
5. Campfire areas are a gravel base approximately 2.5m in diameter with non-flammable designated central fire pit. Herbicides are used to control any vegetation growth around the campfire areas.

8.2 ROADS

6. Internal vehicle tracks meet the requirements of the Natural Hazards, Risk and Resilience - Bushfire State Planning Policy state interest guidance material (2019):
7. Access tracks have a minimum trafficable width of 3 metres and are cleared of woody vegetation to 5 meters wide and 6 meters high.
8. All pedestrian pathways are to be clearly identified with high-vis pegs and maintained to a Class ¾ track as per AS2156.1-2001 Walking Tracks Part 1.

8.3 VEGETATION

9. A grass area less than 100mm in height is to be maintained up to 20m from the cabins.
10. Vegetation within the greater area of the property is maintained by short-term rotational grazing and regular slashing.

11. Vegetated areas around all eco-cabins should remain in a similar condition in terms of structure with limited regrowth in the understory.
12. Weed management programs are currently in place. All vegetation under the cabins is removed and sprayed with pesticide to prevent grass or weeds growing within 30cm of the cabins.
13. Accumulation of fine fuels such as small twigs, leaves, dead grass, bark etc around cabins and amenity areas, is to be checked and removed a minimum of twice per year, once in August and March.

8.4 WATER

14. The property itself has a small firefighting appliance with a 2000L capacity dedicated water supply and refillable tanks. This appliance and supply tanks will be kept in a ready to respond state at all times.
15. A minimum of 20000L of dedicated water supply for suppression of vegetation fires is available at all times. The storage can be in a single store or spread over 3 to 4 tanks in strategic locations.

8.5 RURAL FIRE BRIGADE

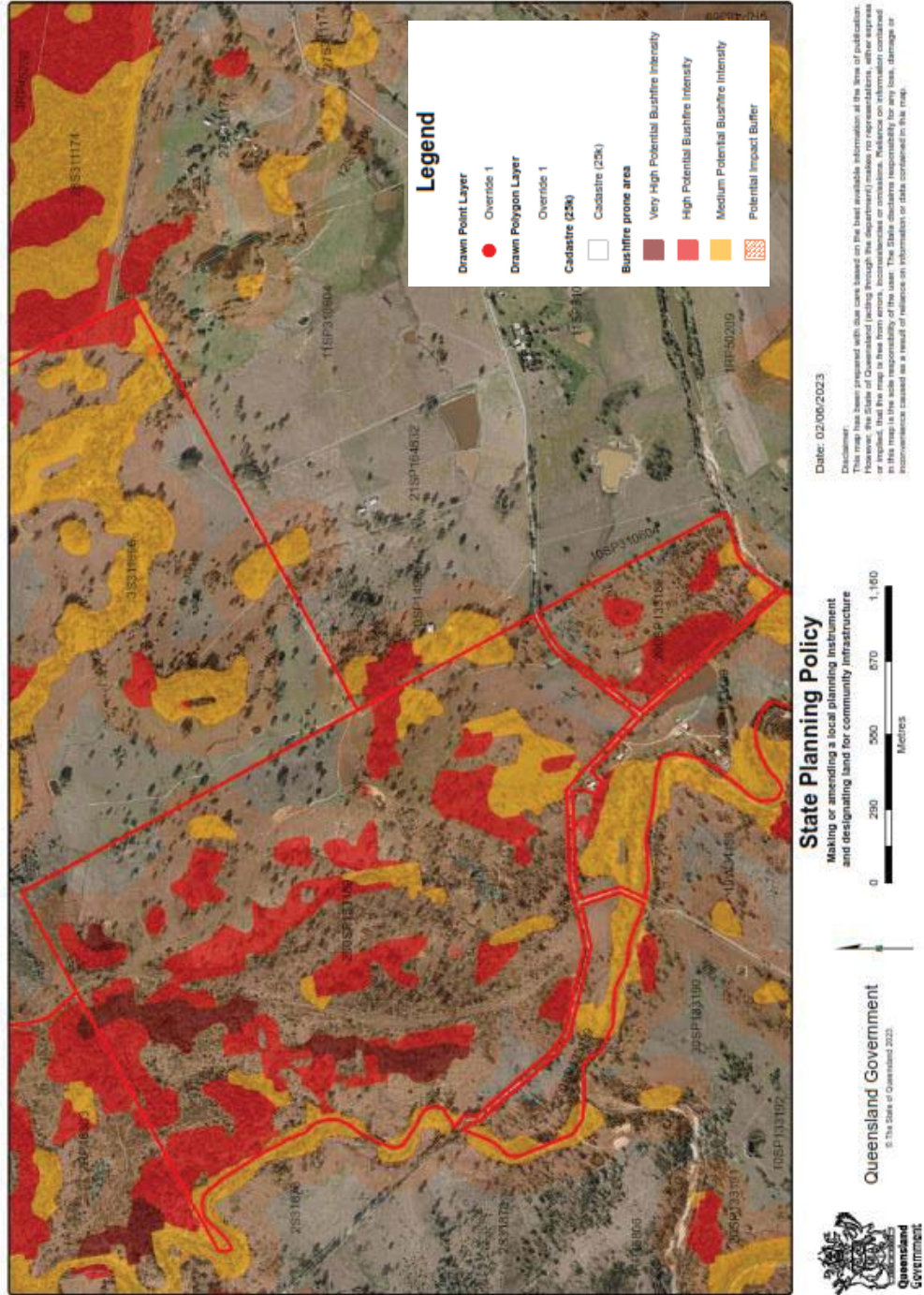
16. In the event of an uncontrolled fire that may threaten the property

Call 000

8.6 EMERGENCY RESPONSE PROCEDURES

17. Evacuation should be early, coinciding with increased fire danger weather, before a bushfire occurs.
18. If a bushfire is reported or detected within 2km of the property guests are to be:
 - a. Informed immediately by the property manager
 - b. All guests requested to pack their belongings and self-evacuate via the designated internal track system to Wyatt Road
 - c. Property manager is to meet all guests at the junction of internal access track and Wyatt Road and check the names of all guests and cabins before directing them to evacuate east along Wyatt Road to Bushman Drive / Kilmore Road.
19. If self-evacuation is not safe due to the location and direction of uncontrolled burns, guests are to be relocated to a defensible position rather than evacuated through potential bushfire hazards. The defensible evacuation point, like the site managers residence, should have communications, water and cooking facilities and the capacity to hold the maximum number of guests on any given day for a short period of time.
20. First Aid for smoke inhalation or minor medical issues should be made available at the evacuation point.

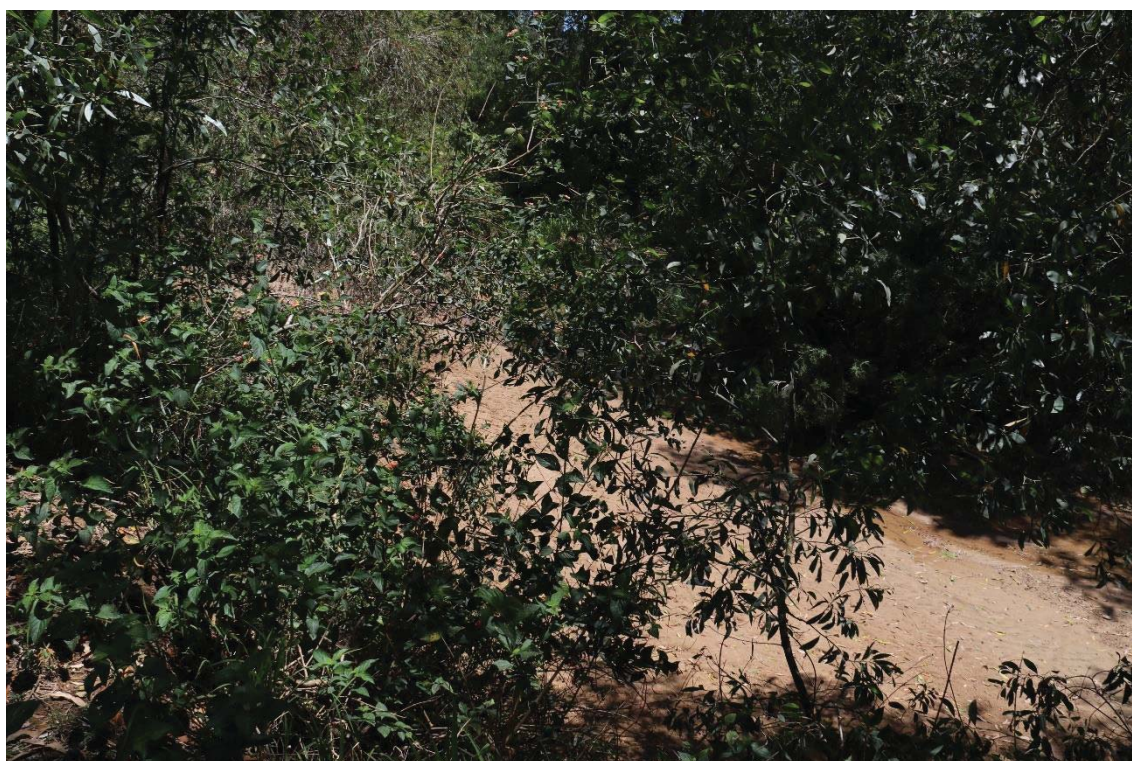
9 ATTACHMENT 1 – BUSHFIRE HAZARD MAPPING



10 ATTACHMENT 2 - PHOTOGRAPHIC PLATES



Photographic Plate 1: View of Cabin Cybele from the creek bank to the north of the location. The grass up to 10m from the cabin and campfire area is maintained at 100mm. Pasture areas greater than 10m away are regularly slashed or grazed



Photographic Plate 2: View into the sandy creek bed to the north and east of cabin Cybele.



Photographic Plate 3: Vegetation mapped as hazardous near Cabin Josef proposed location. Note the understory is low grassland with some Lantana under mature trees and stands of trees.



Photographic Plate 4: View of potential site for Cabin Josef and vegetation to the southwest.



Photographic Plate 5: Vegetation mapped as potentially hazardous to the north of Cabin Remy. This cabin is located on a hilltop that has woody vegetation on the slopes surrounding the cleared plateau.



Photographic Plate 6: View of Cabin Gili from the step bank of the waterway to the west of the site.



Photographic Plate 7: View to the north of Cabin Zerya showing an access track to Wyatt Road for occasional vehicle access.



Photographic Plate 8: Potable water storage for each cabin is located within 100m of the cabin site and is not used for firefighting purposes.



Photographic Plate 9: Gas tank storage is located on a concrete slab at each location. Weed and vegetation control is undertaken under the cabins and around the gas storage areas.



Photographic Plate 10: Campfire areas are a gravel base approximately 2.5m in diameter with non-flammable designated fire area. Pesticides are used to control any vegetation growth around the campfire areas.



Photographic Plate 11: Regular slashing is part of ongoing vegetation management between grazing cycles. This will reduce the risk of any bushfire impacting cabins and other infrastructure.